

ART 31 ANDT

We claim:

1. A process for removing high boilers from crude caprolactam which comprises high boilers, caprolactam and in some cases low boilers, and which has been obtained by
  - 5 a) reacting 6-aminocapronitrile with water to give a reaction mixture
  - b) removing ammonia and unconverted water from the reaction mixture to obtain crude caprolactam,

10 which comprises

  - c) feeding the crude caprolactam to a distillation apparatus to obtain a first substream via the top as a product and
  - 15 a second substream via the bottom, by setting the pressure in the distillation in such a way that the bottom temperature does not go below 170°C, and adjusting the second substream in such a way that the caprolactam content of the second substream is not less than 75% by weight, based on the entire second
  - 20 substream.
2. A process as claimed in claim 1, wherein step a) is carried out in the presence of a liquid diluent.
- 25 3. A process as claimed in claim 2, wherein the liquid diluent is removed in step b).
4. A process as claimed in any of claims 1 to 3, wherein the removal of water is carried out in step b) by transferring the reaction mixture into conditions such that the reaction mixture forms a high-water and a low-water liquid phase, of which the high-water phase is
- 30 removed.
5. A process as claimed in any of claims 1 to 4, wherein the low boilers are removed between steps b) and c).
- 35 6. A process as claimed in any of claims 1 to 4, wherein low boilers are removed after step c).

7. A process as claimed in claim 5 or 6, wherein the low boiler removed is 6-amino-capronitrile.
8. A process as claimed in any of claims 1 to 7, wherein the second substream from step c)  
5 is partly or fully recycled to step a).